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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/789,618

02/27/2004

Tomoji Tarutani

5000-5148

1200

27123 7590 02/27/2007
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EXAMINER

HAMO, PATRICK

ART UNIT

PAPER NUMBER

3746

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/27/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/789,618

Applicant(s)

TARUTANI ET AL.

Examiner

Patrick Hamo

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) 1-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2/27/04, 9/14/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 1-8 are objected to because of the following informalities: in line 27 of claim 1, "cam" is misspelled "camp". Claims 2-8 depend from claim 1 and are likewise objected to. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Murakami et al., 6,231,314.

Murakami discloses a variable displacement compressor with a housing 11, 13, a cylinder block 10 with bores 10a-10f, single-headed pistons 16 received in the bores, a drive shaft 15, a lug plate in the form of rotor 18, a cam plate or swash plate 20 hinged from the lug plate via hinge mechanism 19, a spring 25 that urges the swash plate to a maximum angle (col. 6, ll. 13-21), wherein the drive shaft has a stepped part between the swash plate and the cylinder block and includes a seat surface intersecting an axis of the drive shaft where the spring is located between the step and the swash plate, and the step formed between a small diameter portion in the direction towards the wobble

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plate and a large diameter section away from the wobble plate, the depth of the step wider than the diameter of coil wire forming the spring (see fig. 1). Furthermore, the drive shaft has connected to it continuously but separately formed a rotary valve 40 which constitutes a bearing section as it slides along an inner wall surface of the cylinder block inside valve accommodating chamber 30, the rotary valve connecting a suction pressure zone 26 with the cylinder bore through a gas passage 44,31 formed between the cylinder bore and the suction pressure zone.

4. Claims 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Katayama et al., 6,393,964.

Katayama discloses a variable displacement compressor with a housing 11, 13, a cylinder block 12 with bores 12a, single-headed pistons 20 received in the bores, a drive shaft 16, a lug plate in the form of rotary support body 17, a cam plate or swash plate 18 hinged from the lug plate via hinge mechanism 19, wherein the drive shaft has a stepped part between the swash plate and the cylinder block and includes a seat surface intersecting an axis of the drive shaft formed between a small diameter portion and a large diameter portion of the drive shaft, and the swash plate is at a minimum inclination angle when it contacts the seat surface (fig. 1).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami.

Murakami discloses all of the claimed limitations substantially as claimed and as discussed above and that the drive shaft main body is connected to the rotary valve via end portion or collet 41, the diameter of the rotary valve being greater than that of the collet.

Murakami does not disclose that the step is formed between the bearing portion and the drive shaft main body and that an end face of the bearing portion functions as the seat surface.

However, shifting the position of the seat surface would not have modified the operation of the device and therefore this constitutes a mere rearrangement of parts which fails to patentably distinguish over the prior art. See MPEP §2144.04(6)(b).

7. Claims 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katayama in view of Murakami.

Katayama discloses all of the limitations substantially as claimed and as discussed above except for the following taught by Murakami: the drive shaft has connected to it continuously but separately formed a rotary valve 40 which constitutes a bearing section as it slides along an inner wall surface of the cylinder block inside valve accommodating chamber 30, the rotary valve connecting a suction pressure zone 26 with the cylinder bore through a gas passage 44,31 formed between the cylinder bore

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and the suction pressure zone in order to make the pressure loss extremely small and to maintain a sufficient volumetric efficiency (col. 3, l. 61 – col. 4, l. 9).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Katayama with Murakami in order to make the pressure loss extremely small and to maintain a sufficient volumetric efficiency (col. 3, l. 61 – col. 4, l. 9).

In regards to the claimed limitations that the step is formed between the bearing portion and the drive shaft main body and that an end face of the bearing portion functions as the seat surface, as noted previously, shifting the position of the seat surface would not have modified the operation of the device and therefore this constitutes a mere rearrangement of parts which fails to patentably distinguish over the prior art. See MPEP §2144.04(6)(b).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Hamo whose telephone number is 571-272-3492. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg can be reached on 571-272-4828. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

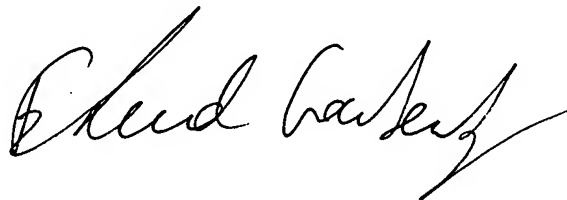
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PA

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EHUD GARTENBERG
SUPERVISORY PATENT EXAMINER